

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

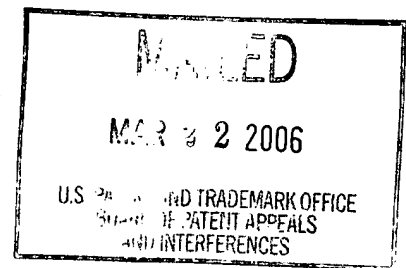
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte MICHAEL GERLE, HANS-ALBERT EHLERT and EBERHARD KONIG

Appeal No. 2006-0436  
Application No. 09/942,465<sup>1</sup>

ON BRIEF



Before PAK, KRATZ, and FRANKLIN, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 through 15, which are all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 134.

APPEALED SUBJECT MATTER

The subject matter on appeal relates to aromatic polyisocyanates blocked by pyrazole or pyrazole derivatives,

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<sup>1</sup>Application for patent filed Aug. 29, 2001, entitled, Aromatic polyisocyanates blocked by pyrazole or pyrazole derivatives and the preparation and use thereof.

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which are useful for "treating textiles, paper or leather." See the specification, page 1. Claims 1 and 8 are representative of the appealed subject matter and read as follows:

1. An NCO-containing reaction product blocked at the NCO groups by 1-H-pyrazole or a derivative thereof, wherein the NCO-containing reaction product is a reaction product of

(A) one or more aromatic polyisocyanates,

(B) one or more NCO-reactive compounds containing sulfonate and/or tert-amino groups, and

(C) optionally, one or more further NCO-reactive compounds other than compounds (B).

8. A process for preparing a blocked NCO-containing reaction products according to Claim 1 comprising reacting components (A), (B), and optionally (C) and 1-H-pyrazole or a derivative thereof as a blocking agent with each other at one and the same time or in any desired order.

#### EVIDENCE

As evidence of obviousness of the claimed subject matter, the examiner relies on the following prior art references:

Reiff et al. (Reiff '370)	5,508,370	Apr. 16, 1996
Reiff et al. (Reiff '737)	5,693,737	Dec. 2, 1997
Danner (Published International Patent Application)	WO 99/52961	Oct. 21, 1999

As evidence of nonobviousness of the claimed subject matter, the appellants rely on the following references:

Deiner et al. (Deiner)	4,834,764	May 30, 1989
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Reiff et al. (Reiff '737)	5,693,737	Apr. 21, 1993 <sup>2</sup>
Baumbach et al. (Baumbach)	5,723,536	Oct. 22, 1997 <sup>3</sup>
Konig et al. (Konig)	6,187,860	Sep. 15, 1999 <sup>4</sup>

#### REJECTIONS

Claim 8 stands rejected under 35 U.S.C. 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which the appellants regard as their invention. Claims 1 through 15 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of either Reiff '370 or '737 and Danner.

#### DISCUSSION

We have carefully reviewed the claims, specification and prior art, including all of the evidence and arguments advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that only the examiner's Section 103 rejection is well founded.

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<sup>2</sup> The appellants have not challenged the examiner's determination that Reiff '737 corresponds to EP 537578 relied upon by the appellants. See the Brief in its entirety.

<sup>3</sup> The appellants have not challenged the examiner's determination that Baumbach corresponds to EP 802210 relied upon by the appellants. See the Brief in its entirety.

<sup>4</sup> The appellants have not challenged the examiner's determination that Konig corresponds to EP 942023 relied upon by the appellants. See the Brief in its entirety.

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Accordingly, we only affirm the examiner's Section 103 rejection for essentially the factual findings and conclusions set forth in the Answer, the Supplemental Answer and below.

As evidence of obviousness of the claimed subject matter under Section 103, the examiner relies on the combined disclosures of either Reiff '370 or '737 and Danner.<sup>5</sup> According to the examiner (the Answer, page 4), Reiff '370 and '737 individually teach

the production of blocked isocyanates and their use with water-proofing and oil-proofing fluorocarbon resins as textile treating compositions, wherein the blocked isocyanates are the reaction product of polyisocyanates, including aromatic isocyanates; active hydrogen compounds containing ionic or potential ionic groups, including sulfonate and/or ter-amino groups; polyoxyalkylene ethers; and blocking agents. See also Reiff '370, column 1, lines 10-15, column 2, lines 3-15 and 63-65 and column 4, lines 1-12; and Reiff '737, column 10-27, column 2, lines 3-14 and 59-60, and column 3, line 65 to column 4, line 10.

The appellants do not challenged this finding. See the Brief in its entirety. Rather, the appellants argue that one of ordinary skill in the art would not have been led to employ pyrazoles (the claimed pyrazole and pyrazole derivatives) as the blocking agent of Reiff '370 or '737. Id. We do not agree.

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<sup>5</sup>For purposes of this appeal, claims 1-15 stand or fall together. Compare the Answer, page 3, with the Brief in its entirety.

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We find that it can be inferred from columns 1, 2 and 4 of Reiff '370 and '737 that any conventional NCO-blocking agent can be used to form their blocked aromatic isocyanates having ionic compounds containing at least one NCO-reactive group and at least one, for example, amino or sulfonate group. We find that Reiff '370 and '737 teach that the preferred conventional NCO blocking agents may be "compounds with preferably one group capable of reacting with isocyanate groups and undergoing an addition reaction with organic isocyanates above 50 °C..." See Reiff '370, column 10, lines 50-54 and Reiff '737, column 10, lines 50-54. We find that Reiff '370 and '737 teach "[e]xamples of suitable blocking agents" as including, inter alia, imidazole. See Reiff '370, column 10, lines 54-64 and Reiff '737, column 10, lines 54-64. Although Reiff '370 and '737 do not specifically mention the claimed pyrazoles, the examiner correctly finds at pages 4 and 5 of the Answer that the claimed pyrazoles are conventional NCO "blocking agents within [sic, for] polyisocyanate compositions to be used as textile finishes yield[ing] finishes having improved oil-and water-repellant properties and improved fastness properties." See Danner, pages 1 and 2. Indeed, the appellants do not dispute this finding.

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Compare the Answer, pages 4-5, with the Brief in its entirety. Nor do the appellants dispute the examiner's finding that Danner teaches that "a preferred polyisocyanate is MDI, which is aromatic" and that the claimed pyrazoles are isomers of (structurally similar to) imidazole taught by Reiff '370 and '737. Compare the Answer, page 5, with the Brief in its entirety. We find that Danner also teaches that the blocking of the isocyanate groups with the claimed pyrazoles can take place at a temperature above 50 °C. See page 7.

Given the above teachings, we concur with the examiner that one of ordinary skill in the art would have been led to employ conventional NCO-blocking agents, such as imidazole or the claimed pyrazoles (pyrazole and pyrazole derivatives), to form the blocked aromatic isocyanates taught by Reiff '370 and '737, with a reasonable expectation of successfully making blocked polyisocyanates useful for conferring at least an oil-repellent and/or water-repellant finish on textile materials.

As a rebuttal to the prima facie case of obviousness established by the examiner, the appellants rely on Deiner, Reiff '737, Baumbach and Konig to show that one of ordinary skill in the art would not have been led to use the claimed pyrazole

blocking agents to form the blocked aromatic isocyanates taught by Reiff '370 and '737.

See the Brief, pages 6-7. Specifically, the appellants assert that these references teach

polyisocyanates that are blocked by pyrazole derivatives and that are hydrophilized by incorporated ethylene oxide groups or hydrocarboxylic acids. ... [the] blocked isocyanates are disadvantaged by problems of permanent hydrophilicity; hence, inadequate hydrophobicity which would lead the skilled artisan away from the claims. See the Brief, page 6.

It appears to be the appellants' position that polyisocyanates having ethylene oxide groups that are blocked by the claimed pyrazoles would have been expected to promote permanent hydrophilic properties which are unsuitable for textile application. See the Brief, pages 6-7.

We find nothing in these references that would teach away from employing the claimed pyrazoles as NCO blocking agents to form the water-dispersible blocked polyisocyanate taught by Reiff '370 or '737. As correctly found by the examiner (the Answer, page 7), these references teach preference for the claimed pyrazoles as NCO blocking agents in forming textile-treating polyisocyanate compositions in general. See, e.g., Konig, column 1, lines 15-17 and Baumbach, column 8, Example 3. Konig, for example, teaches that pyrazoles are "one of the few isocyanate

blocking agents which are stable in aqueous media and capable of forming reactive crosslinking agents." See, e.g., Konig, column 1, lines 15-17. Konig also teaches that the claimed pyrazole, i.e., dimethylpyrazole, is capable of blocking the NCO groups of a polyisocyanate at a temperature of 65 °C (above 50 °C) as desired by Reiff '370 or '737. See Konig, Example 1, columns 3 and 4. Konig only teaches away from using **nonionic** polyethylene chains which will impart permanent hydrophilic properties. See Konig, column 1, lines 35-43.

Baumbach, like Konig, forms a water-dilutable blocked polyisocyanate according to its invention by employing the claimed pyrazole, i.e., dimethylpyrazole. See column 8, Example 3. This claimed pyrazole is shown to block the NCO groups of a polyisocyanate at a temperature of 80 °C (above 50 °C). Id. In other words, Baumbach also teaches that the claimed pyrazole is within the category of the NCO blocking agents preferred by Reiff '370 and '737 as indicated supra.

Deiner and Reiff '737, on the other hand, do not mention pyrazole blocking agents. See Deiner and Reiff '737 in their entirety. Rather, they state that any conventional NCO blocking agents may be used to block the NCO groups of their polyisocyanates so that they can form desired blocked



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polyisocyanates for treating textiles materials. See Deiner, column 2, line 62 to column 3, line 1 and Reiff '737, columns 1, 2, and 3.

Thus, for the reasons well articulated by the examiner at pages 6 through 9 of the Supplemental Answer and set forth above, it cannot be said that the appellants have carried their burden of rebutting the prima facie case established by the examiner. Indeed, the references of record relied upon by the appellants support, rather than negate, obviousness of the claimed invention.

Based on the totality of record, including due consideration of the appellants' arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of Section 103(a). Accordingly, we affirm the examiner's decision rejecting claims 1 through 15 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of either Reiff '370 or '737 and Danner.

As for the Section 112, second paragraph, rejection, we note the examiner's concern over the phrase "at one and the same time or in any desired order" recited in claim 8. Although the phrase in question is awkwardly written, it does not rise to the level of indefiniteness. From our perspective, it would have

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reasonably apprised one of ordinary skill in the art that the claimed reactants can be combined simultaneously or in any sequence desired by one of ordinary skill in the art. Thus, we reverse the examiner's decision rejecting claim 8 under Section 112, second paragraph, as being indefinite.

#### CONCLUSION


In view of the foregoing, the decision of the examiner is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

AFFIRMED



CHUNG K. PAK  
Administrative Patent Judge

PETER F. KRATZ  
Administrative Patent Judge

Beverly A. Franklin  
BEVERLY A. FRANKLIN  
Administrative Patent Judge

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